35 Northampton Street Redevelopment Project

Health Impact Assessment

Boston Health in All Policies Task Force

September 2012

Acknowledgements

This Health Impact Assessment was drafted on behalf of the Boston Health in All Policies Task Force, representative of various City of Boston agencies and partner organizations. Convened by the Boston Public Health Commission, the team leads are Pam Jones, Director of Policy and Planning, and Anne McHugh, Director of the Division of Chronic Disease Prevention and Control. This report is the culmination of the efforts of many – that ranged from providing insight to developing content – and includes participation of the following organizations:

Boston Alliance for Community Health

Boston Collaborative for Food and Fitness

Boston Emergency Medical Services

The Boston Foundation

Boston Housing Authority

Boston LISC

Boston Parks Department

Boston Public Health Commission

Boston Redevelopment Authority

Boston Society of Architects

Boston Transportation Department

City of Boston, Department of Innovation and Technology

City of Boston, Department of Neighborhood Development

City of Boston, Energy and Environmental Services

City of Boston, Office of Food Initiatives

Harvard School of Public Health

Human Resources in Action

Livable Streets Alliance

MassBike

Mayor's Office of Emergency Management

Northeastern University, Dukakis Center for Urban and Regional Policy

Renew Boston

WalkBoston

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35 NORTHAMPTON SQUARE HEALTH IMPACT ASSESSMENT

EXECUTIVE SUMMARY

The 35 Northampton Street project involves the redevelopment of an existing 29-story, 165,000 square foot residential building that currently holds 237 units of de-facto affordable housing. The project is part of the larger 3.3 acre Northampton Square campus that is owned by the Boston Public Health Commission.

This Health Impact Assessment (HIA) has been conducted as a pilot exercise by the Boston Health in All Policies Task Force. The Task Force is a partnership between City agencies and interested partners that was convened in January 2012 by the Boston Public Health Commission with the goals of ensuring that human health impacts, community resilience and health equity are factored into all City of Boston policy and planning decisions as a standard practice, and to developing tools to accomplish this.
Health Impact Assessments are an emerging best practice defined as "a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, program or project on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects."[1]

The Task Force and this HIA support the advancement of this project as it will provide significant benefits to community health and wellness in the form of preserved and protected affordable and supportive housing, improved opportunities for physical activity, enhanced safety, employment opportunities, accessibility and sustainability.

While this assessment supports the 35 Northampton Street project and its goals, in keeping with recommended Health Impact Assessment practice, the following presents a series or recommendations for improvements to the plan to improve the health and safety of the residents and surrounding community.

As a result of a deliberative scoping process, the scope of this analysis includes the following determinants of health: housing, active design, public safety, environmental exposures and employment. For each determinant, teams looked at: (a) the evidence supporting the causal Health Impact Pathway between the determinant and health outcome; (b) existing health and built environment conditions; (c) potential impacts of the project plan; and (d) recommendations for improvement.

[1] North American HIA Practice Standards Working Group (Bhatia R, Branscomb J, Farhang L, Lee M, Orenstein M, Richardson M). 2010 Minimum Elements and Practice Standards for Health Impact Assessment, Version 2. North American HIA Practice Standards Working Group. Oakland, CA

A common theme of the recommendations is building on the strengths of the proposed plan. Some specifics include:

Housing:

- Execute legal agreements that will ensure the highest level of affordability for the longest period of time.
- Participate in marketing practices to ensure that the resident mix is reflective of the city as a whole.

Active Design:

- Take measures to promote the availability and accessibility of the South End Fitness Center and continue offering subsidized memberships to low-income residents.
- Consider measures to enhance safety of stairs including security cameras and alert buttons.
- Incorporate signage, artwork and other design elements to encourage stair use.
- Encourage bicycle use through additional secured parking, signage and other informational efforts to connect residents to bike parking, Hubway stations, and bike helmets.

Public Safety:

- Use Crime Prevention Through Environmental Design (CPTED) strategies including lighting, landscaping surveillance and physical security features to reduce the incidents and perception of crime.
- Develop a plan to address immediate concerns related to safety and disorder including non-resident access, cleanliness and drug activity.

Environmental Exposures:

- Improve energy performance by achieving the highest possible degree of insulation from windows and walls.
- Consider the effects of climate change and the possibility of heightened likelihood of flooding and extreme weather. Where possible, remove critical infrastructure from lower levels of the building and take measures to make those levels resistant to flooding.
- Take all appropriate measures to contain any lead, asbestos or other hazardous materials and use low-volatile organic compound building materials and hard flooring as opposed to carpet.
- Take enhanced measures to improve emergency preparedness and implement personal evacuation plans for any disabled or impaired residents.

Employment:

- Meet or exceed the requirements of the Boston Residents Jobs Policy, and consider measures to ensure that residents from the surrounding neighborhoods are offered opportunities for employment.
- Meet or exceed the wage set by the Boston Living Wage Ordinance for all jobs created by the development.

In addition to the above list, there are some recommendations provided to address concerns raised during focus groups sessions regarding the current stakeholder engagement process. Given that there may be other opportunities to involve Northampton residents within the scope of this project and through the overall Northampton Square redevelopment planning, we hope that the suggested strategies for their soliciting their participation and feedback will be incorporated as well.

INTRODUCTION

Project overview

The 35 Northampton Street project involves the redevelopment of a 29-story residential building at 35 Northampton Street, which is part of the larger Northampton Square campus, which occupies a 3.3 acre site in Boston's South End/Lower Roxbury neighborhood. The campus also a 12-story building at 860 Harrison Avenue, the Miranda Creamer Building (which houses Boston Public Health Commission offices, the South End Fitness Center and the Carter Auditorium), a two-story commercial building and a 539-car parking garage. The campus was built in the early 1970's to house the Boston City Hospital School of Nursing. It was acquired by the Boston Public Health Commission (BPHC) in 1996, when Boston City Hospital was merged into the Boston Medical Center.

The existing residential buildings on the campus have a total of 346 units, 299 of which are "micro apartments" that average 362 square feet in size. Many are occupied by individuals working at the adjacent Boston Medical Center campus, Boston University School of Medicine, BPHC and other nearby employers. Due to insufficient resources, needed maintenance has been long deferred, and the property will require significant capital investment to remain a viable housing resource.

To address the capital needs of the campus, BPHC issued a Request for Qualifications to find a developer to redevelop the portions of the site most in need of renovation. Boston's Board of Health designated Trinity Northampton Phase One Limited Partnership, an affiliate of Trinity Financial, Inc. as developer for the site. In January 2012, Trinity submitted an Environmental Notification Form to the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA). The Secretary of EOEEA issued a certificate waiving further review in March 2012.

Throughout the process, Trinity has presented versions of the plans for the broader campus and 35 Northampton Street to the residents and broader community. Trinity has also held smaller meetings with individuals and stakeholder groups.

Due to funding considerations, the developer decided to approach 35 Northampton Street as a separate project. The scope of this Health Impact Assessment is limited to this project, 35 Northampton Street.

The draft plan for the present project, or Project Notification Form, filed with the Boston Redevelopment Authority on August 3, 2012 calls for the redevelopment of 35 Northampton Street, a 165,000 square foot, 29 story building that currently consists of 237 units of housing. The plan under consideration does not include changes to the other non-residential portions of the campus, including the South End Fitness Center, Miranda Creamer building or the storefronts along Massachusetts Avenue. While this project does not call for any changes to the residential units at 860 Harrison Avenue, it does incorporate a new combined entrance, security desk and enclosed walkway that will serve both buildings.

As stated in the Project Notification Form, the major goals of the 35 Northampton Street redevelopment plan are to: (1) Address the capital needs of the existing housing at 35 Northampton Street. (2) Preserve the affordable nature of the existing housing, and set aside at least 37 affordable apartments for formerly homeless clients of supportive housing programs as the units are turned over to new tenants.

(3) Make the redeveloped building far more energy efficient and create a healthier and more secure living environment. (4) Generate financial resources to support BPHC programs.

The main components of the 35 Northampton Street project are:

- A $52 million redevelopment including: all new mechanical systems and electrical services, elevator system upgrades, all new energy efficient windows, exterior façade repairs, a new roof, renovated and code-compliant trash chutes, new laundry rooms on every other floor, unit improvements (including all new and upgraded kitchens), a new storage closet, new low-flow plumbing fixtures, new flooring, blinds, and paint throughout.
- The construction of 11 handicapped accessible units within the building, a new lobby, management office, mailroom and corridor system between the two existing towers, and a new elevator for residents of the two existing residential buildings, with access to a garage that has greatly improved security and accessibility.
- Parking garage upgrades including additional handicapped parking spaces, accessible entrances and exits, and improved security features.

All 245 existing and new units will be made available at affordable rents. More than $1 million annually will be provided to the BPHC by either the owner or lessee of the residential units to support public health initiatives in Boston.

At public meetings, Trinity Financial has also stated its intent to engage in a master planning process for the entire campus. Though this Health Impact Assessment (HIA) addresses only the immediate 35 Northampton Street project, future phases of the overall project should receive continued attention to ensure that positive potential health benefits are maximized and negative potential health impacts are minimized. This attention and analysis should focus on the health issues identified in this report, as well as additional health and safety-related concerns that may be raised by members of the community.

Boston Health in All Policies (HiAP) Interagency Task Force

How the Task Force is organized: The Task Force is a partnership between City agencies and interested partners that strives to ensure that human health impacts, community resilience and health equity are factored into all City of Boston policy and planning decisions as a standard practice, and to develop tools to accomplish this. The Task Force was convened in January 2012 by the BPHC, and consisted of representatives from several City of Boston agencies and partner organizations.

The Task Force is organized into three workgroups, which meet monthly:

- The Data Sharing workgroup subcommittee identifies data and information needs for City agencies to help systemize data sharing across city agencies and partners. To support the HIA, the Data Sharing workgroup identified local data sources to inform the analysis of the report.
- The Community Engagement Subcommittee convened with the goal of developing recommendations for standards to improve outreach and engagement efforts. Using racial equity tools, the group identified stakeholders and developed a process for involving Northampton Square residents in the HIA process. The group hosted a series of focus group sessions to learn more about the residents' experiences living in Northampton Square, feelings about the upcoming project and any recommendations they may have.

- The Health Impact Assessment workgroup took the lead in this pilot HIA exercise. It reviewed existing City policies, regulations and guidelines to identify opportunities to more explicitly incorporate the consideration of health and health equity. Additionally, this subcommittee is responsible developing a feedback channel for the Task Force, and an infrastructure for conducting potential future HIA projects. This may ultimately include a checklist or other tools that can be used to encourage and inform the consideration of health in future plans, proposals and policies.

The HIA process: The International Association of Health Impact Assessment defines Health Impact Assessment as "a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, program or project on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects."

Throughout each phase of this pilot HIA exercise, the workgroup discussed the critical elements of Health Impact Assessment practice, taking time to consider lessons learned along the way. To guide this learning process, facilitators drew on Minimum Elements and Practice Standards for Health Impact Assessment document created by the North American HIA Practice Standards Working Group.[2]

- **Screening** is the process of determining if an HIA would be timely, add value to a decision making process and be feasible in light of resource constraints.[3] In this pilot, the screening phase began at the first meeting of the Task Force. In a self-selected breakout session, the group that ultimately became the HIA Subcommittee generated a list of 16 potential plans, projects and policies for the pilot HIA. The following two meetings of the Subcommittee were spent discussing the merits of the various proposals, adding and removing items to reflect the group consensus. Since most of the subjects on the list were related to land use, it was a challenge to find a development or plan that fit well within the desired timeframe for the pilot (March to September 2012).

- Because lags in time between the initial announcement of a project through a letter of intent and the Project Notification Form filing that begins the start of the public review of projects, it was difficult to find an appropriate project that would be under consideration during the window of time identified for the project. This factor - the lack of a timely public decision - led to the elimination of several potential targets. The initial Northampton Square filing in January and the early August filing of the scaled-back 35 Northampton Street project plan allowed for scoping and assessment turned out to be a reasonably good fit with our timetable. During the process, workgroup members were able to gain insight into the uncertain timing common in land use development projects, and the constraints that this uncertainty places on the ability to conduct adequate analysis and advocacy.

- **Scoping** is the process of determining priority issues, research questions, methods and the roles of participants. The scoping phase of this HIA began with the second meeting of the full Task

[2] North American HIA Practice Standards Working Group (Bhatia R, Branscomb J, Farhang L, Lee M, Orenstein M, Richardson M). 2010 Minimum Elements and Practice Standards for Health Impact Assessment, Version 2. North American HIA Practice Standards Working Group. Oakland, CA

[3] Human Impact Partners 2011 A Health Impact Assessment Toolkit: A Handbook to Conducting HIA, 3rd Edition. Oakland, CA: Human Impact Partners.

Force, where a list of health determinants was discussed in light of the existing conditions in the campus and surrounding neighborhood. After sharing observations and opinions about the health determinants that may be most significant to the neighborhood, the group completed a dot voting exercise, where all of the determinants were posted along a wall in the meeting room on pieces of paper, and each participant was allowed to vote with two stickers as to where the working group should focus the research and analysis. Six areas were initially prioritized as especially significant: access to physical activity, transportation, food access, safety, air quality and social cohesion. As the research and fact-finding process developed, this list was modified. The workgroup also began to consider the data sources that would be needed to assess existing conditions and potential health impacts. This list of health determinants and data sources was organized into a rough outline that was presented to the HIA and Data Subcommittees for discussion, revision and acceptance. In this revision process, several health determinants were addressed and discussed, including social capital and food access. In all cases, the exclusion of these determinants from this analysis reflects resource constraints and an effort to find the most critical issues for this project.

- **Assessment** includes both the determination of existing conditions and the evaluation of potential health impacts using qualitative and quantitative research methods and data. Teams of volunteers took the lead in assessing each of several areas, working with a common outline (health impact pathway, existing conditions, potential health impacts of the proposed plan, recommendations).

- **Recommendations** should be developed to improve the project, plan, or policy and mitigate negative health impacts as well as improve potential positive health impacts. Sources of recommendations varied, but many were based on a review of existing tools from other jurisdictions, particularly the Healthy Development Measurement Tool, a comprehensive set of evaluation and planning tools developed by the San Francisco Department of Public Health.

- **Reporting** involves preparing a presentation or report of the findings, and communicating the results formally within the decision-making process. In this case, the recommendations regarding the 35 Northampton Street project will be submitted to the Boston Redevelopment Authority in the formal review process set forth in Article 80 of the Boston Zoning Code, and will be communicated directly to the development team.

- **Monitoring** tracks the impacts of the HIA on decision-making, implementation of decisions, and the impact of the decision on selected health determinants. Ideally, an evaluation plan will focus on following the status of proposed recommendations to address which have been incorporated into the final plans for the project and reflected in the design, construction and operation of the project.

As part of the effort to contribute data to both prongs of the assessment from the most impacted stakeholders, a community engagement process was undertaken, to reflect the experience of the stakeholders most impacted by the project.

Although a potential larger Northampton Square project would have an impact on a larger group of stakeholders, including staff, fitness center members, patients and institutions connected to the Boston Medical Center and associated academic medical communities, the primary stakeholders in the case of the single building renovation were determined to be current residents and vulnerable populations for

whom the existence of this affordable housing resource connected to significant social, medical and behavioral health supports, is critical to achieving wellbeing and positive health outcomes.

For this reason, two focus groups were conducted on August 29th and 30th, and outreach to residents of 35 Northampton Street was done to recruit participation in these focus groups. Residents were notified of focus groups at public meetings held by Trinity Financial, and through flyers placed under the doors of all 35 Northampton St residents in the week leading up to the focus groups. Additional outreach was done to residents who are part of BPHC's "Housing First" intervention program, which places chronically homeless adults into permanent low-barrier housing with intensive recovery supports and other wraparound services, along with case managers from this program. There were thirteen total participants in the focus groups, representing residents of 35 Northampton St and a case manager for a Housing First intervention program which currently houses clients in the building.

Health Equity in Boston

Boston's White residents, on average, enjoy better health than Black and Latino residents. Biology, personal behaviors, and access to health care do not adequately account for these racial and ethnic health inequities. Instead, we need to look at how social, economic, and environmental resources that influence health are distributed across communities. Resources that impact health include income and wealth, education and employment opportunities, food access, opportunities for physical activity, health and social services, and political power. The nation's history of racism has led to an unequal distribution of these resources resulting in people of color bearing an inequitable burden of disease.

Health inequities are found across multiple health conditions. For example, according to the 2011 *Health of Boston* report[4]:

- In 2010, 33% of Black adults in Boston were obese, compared with 25% of Latino adults and 16% of White adults.
- In 2008, the diabetes mortality rates for Black and Latino residents were about three times the rate for White residents.
- The diabetes mortality rate per 100,000 residents was 38.4 for Black residents and 34.8 for Latino residents compared with 11.9 for White residents.
- In the same year, the mortality rates for stroke for Black and Latino residents were almost twice the rate for White residents.
- In 2008 and 2009, Black and Latino children ages 3 to 5 had the highest age-specific asthma hospital emergency department visit rates among racial/ethnic groups. In 2009, the rates for Black and Latino children were more than twice the rate for White children and three to four times the rate for Asian children.

[4] Boston Public Health Commission. *Health of Boston 2011*. http://www.bphc.org/about/research/Forms%20%20Documents/Health%20of%20Boston%202011_Final_Print_Revised_30Nov11.pdf.

- The homicide rate for Black residents exceeded that for other racial/ethnic groups for every year from 1999 to 2008. During this period, more than two-thirds of Boston homicide victims were Black.

These health inequities are also reflected in neighborhood level data. Boston neighborhoods with the highest concentrations of residents of color experience higher burden of disease.

Neighborhood Characteristics

- Location: The project is situated in what is known the South End/Lower Roxbury Neighborhood of Boston. This is effectively the border between the neighborhoods of the South End and Roxbury. This presents certain challenges for setting the geographic scope of this HIA. To fully understand the health status of the project area it is necessary to look at data for both the South End and Roxbury.

The project site is surrounded largely by institutional uses - the Boston Medical Center and Boston University School of Medicine campuses - and is near the Newmarket Business District, a largely light industrial district.

The site is adjacent to the southern end of the Harrison Albany Corridor Strategic Plan study area. That plan set forth a number of goals for the area that, when implemented, would likely have positive health effects for residents in and around the area. Specifically, the plan calls for creating green corridors to connect with the South Bay Harbor Trail, Fort Point Channel and South Boston and promotes the creation of open space. Additionally, the plan calls for the development of affordable housing and other public use amenities, and urban design principles that would improve the walkability of the area and encourage active transportation.[5]

- Neighborhood demographics:

According to the 2010 Census, Roxbury had a population of 59,978 residents. 43% of Roxbury residents identified themselves as Black, 26% identified as Latino, 21% identified as White, and 6% identified as Asian. Two percent of residents of Roxbury identified themselves as belonging to two or more racial/ethnic groups. Compared to the 2000 Census, there was an in increase in the Asian, Latino, White and population of Roxbury, and a decrease in the Black population. Median income was $30,650, much lower than for the city as a whole.

In 2010, the population of the South End was 34,669. By race/ethnicity 56% of residents were White, 19% Black, 17% Latino and 14% Asian; 7% identified themselves as an other race and 3% identified as more than one race. Compared to the 2000 Census, there was an increase in the total population, and specifically an increase in the White, Latino and Asian populations, and a small decrease in the Black population. The median household income for the South End is $51,870, compared with $52,433 for Boston.[6] [7]

[5] Boston Redevelopment Authority, Harrison Albany Corridor Strategic Plan, June 2012

[6] City of Boston Department of Neighborhood Development, Policy Development and Research Division, South End Data Profile, 2010. Available at: http://www.cityofboston.gov/Images_Documents/South_End_Planning_District_Profile_tcm3-13007.pdf

- Community Meeting Reports:

A Roxbury community health meeting in 2009 generated community feedback on the challenges to preventing obesity, diabetes and other chronic disease through healthy eating and physical activity, and possible strategies to support these activities. This included a focus on affordable physical activity, cooking classes, and places to buy healthy food. Some of the opportunities to accomplish this discussed at the meeting included increasing awareness of the health-promoting resources already available in the community, and using development funds and Empowerment Zone designations to bring businesses that promote health into the community. Recommendations from this meeting included conducting Health Impact Assessments of development projects.[8]

A South End Community meeting in 2011 focused on similar issues, in addition to substance abuse and sexually transmitted infections. Concerns also included a lack of opportunities for physical activity for children inside and outside of school, the new kinds of drugs that are being introduced, and the lack of sufficient sexual health education and screening for young people in medical, school and community settings. Recommendations included methods to promote culturally relevant educational opportunities to learn about healthy eating and cooking, including through the media, efforts to increase awareness of problems with the built environment and improvements to make streets and sidewalks more walkable, grassroots and peer efforts to create more positive opportunities for youth, and better attention to the needs of homeless populations in the South End.[9]

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[7] City of Boston Department of Neighborhood Development, Policy Development and Research Division, Roxbury Data Profile 2010. Available at: http://www.cityofboston.gov/Images_Documents/Roxbury_Planning_District_Profile_tcm3-12996.pdf

[8] Boston Public Health Commission, Office of Policy & Planning, Health of Roxbury Final Report, 2009. Available at: http://www.bphc.org/about/policyandplanning/Forms%20%20Documents/Health%20of%20Roxbury%20Final%20Report.pdf

[9] Boston Public Health Commission, Office of Policy & Planning, Health of South End Final Report, 2011. Available at: http://www.bphc.org/about/policyandplanning/Forms%20%20Documents/South%20End%202010.pdf

-Selected Health Outcomes:

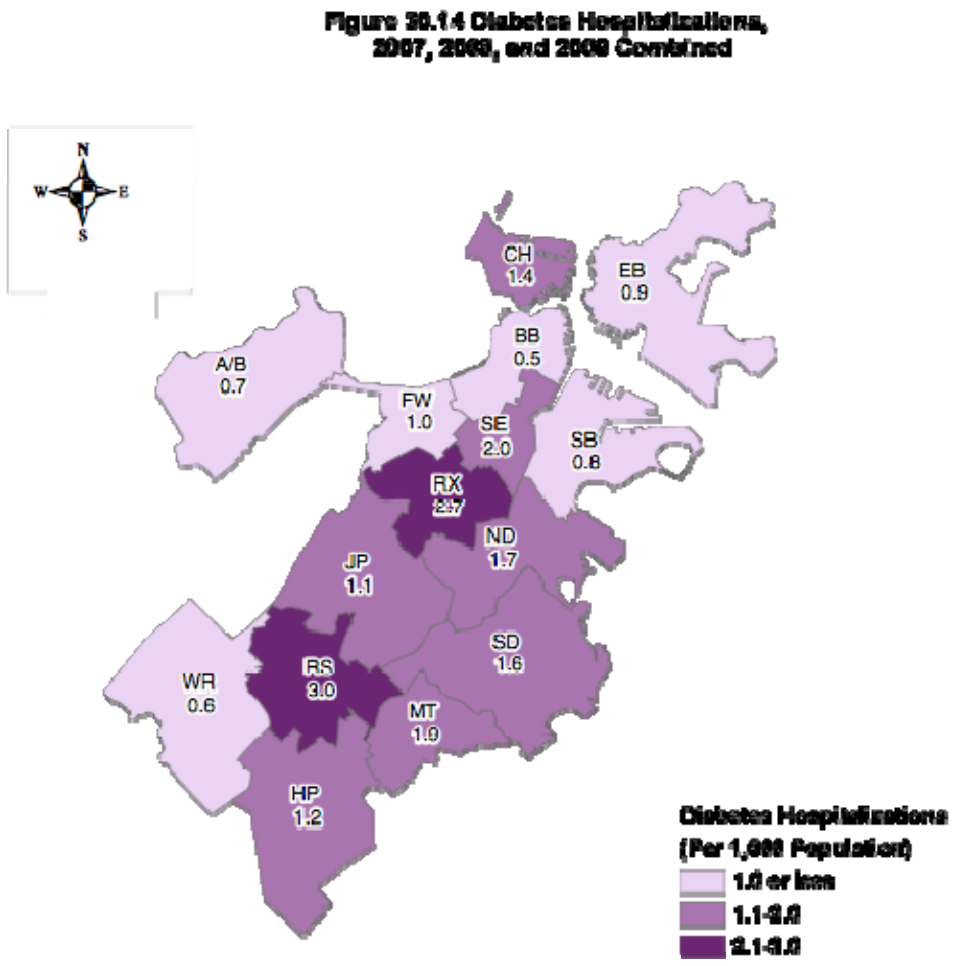
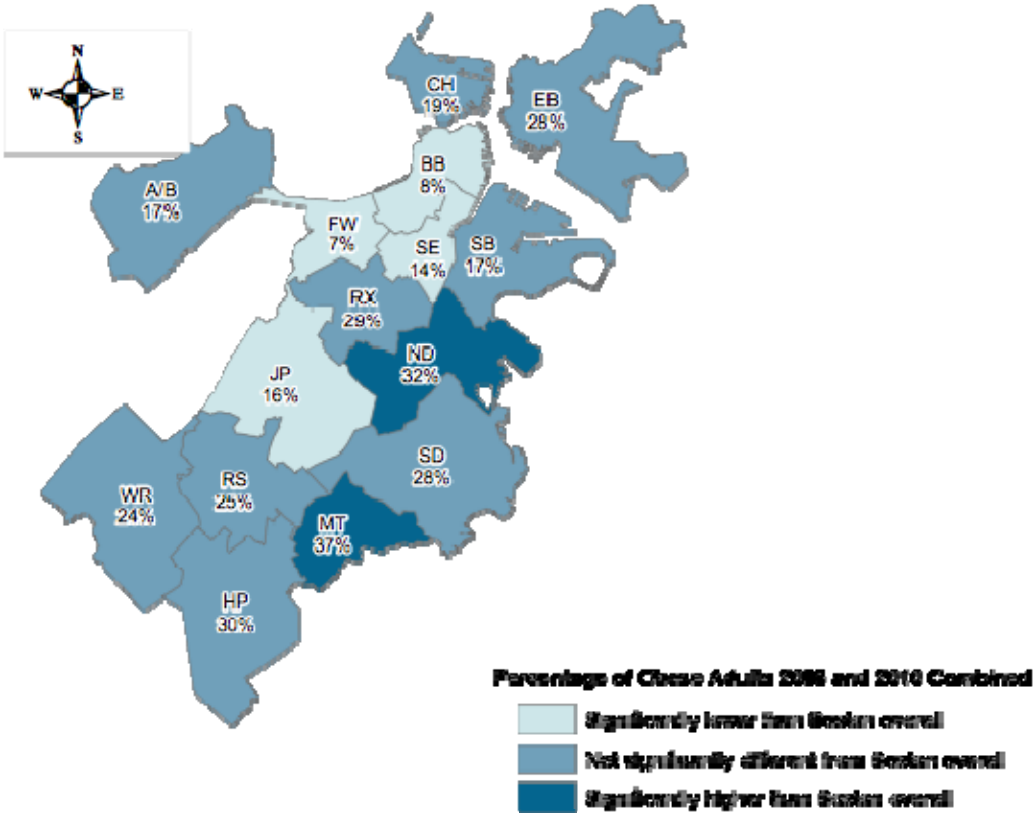


Figure 30.14 Diabetes Hospitalizations, 2007, 2008, and 2009 Combined

The rate of diabetes hospitalizations for Roxbury and the South End were both above the average for Boston in the years 2007, 2008 and 2009 combined, and the difference between the rate for Roxbury, 2.7 per 1,000 residents and the rate for Boston overall was statistically significant.

Figure 28.18 Obese Adult Residents, 2008 and 2010 Combined



The percentage of obese adults in the South End is 14%, which is significantly lower than that of Boston overall, while the rate of obesity among adults in Roxbury is 29% which is similar to the average rate for Boston. The rate of obesity for Boston residents with incomes equal to or below $25,000 is 27% and 15% for Boston residents who earn $50,000 or more.

HOUSING

Health Impact Pathway

Housing conditions can have a potentially significant impact on residents' health. Risk factors in the home environment can contribute to the severity of asthma for children and adults[10], childhood injuries[11] and a variety of other health concerns. Housing conditions that adversely impact health disproportionately affect low-income households, including many public housing residents.[12] For example, elders who live in public housing were two times as likely to rate their health as fair or poor than those who had not lived in public housing.[13] Low-income households are more likely to be exposed to higher concentrations of indoor and outdoor pollutants. Increased housing costs can also affect health, by leading to displacement and segregation, which have been connected with exposure to air pollutants, increased tuberculosis risk, cardiovascular disease and teenage childbirth.[14] In addition, families facing a significant rent burden often need to make tradeoffs between rents and other needs, including food, medical insurance, and healthcare, thereby threatening the health of children.[15] Housing instability has been associated with postponed medical care, postponed medications, and increased emergency department visits.[16]

The degree of residential segregation caused by the lack of affordable housing can lead to additional health effects. Segregated neighborhoods have fewer community assets including schools, public transportation, food retailers and more bus yards, power plants and other environmental hazards than racially integrated neighborhoods.[17] High housing costs can also lead to overcrowding, which can lead

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[10] Rauh VA, Landrigan PJ, Luz C. 2008. Housing and health: Intersection of poverty and environmental exposures. Ann N Y Acad Sci. 2008;1136:276-88
Positive impacts on children's health
http://chispahousing.org/docs/The%20Positive%20Impacts%20of%20Affordable%20Housing%20on%20Health.pdf
HDMT Evidence and Standards http://www.thehdmt.org/objectives/standards/63
MRVP CHIA http://www.hiaguide.org/sites/default/files/HIAofhousingrentalvoucherschildhealth.pdf

[11] American Academy of Pediatrics. 2001 Falls from heights: windows, roofs, and balconies. Pediatrics. 107:1188–1191.

[12] Adamkiewicz G, Zota AR, Fabian MP, Chahine T, Julien R, Spengler JD, Levy JI. 2011. Moving environmental justice indoors: understanding structural influences on residential exposure patterns in low-income communities. Am J Public Health 101 Suppl 1:S238-45. PMID: 21836112

[13] Parsons PL, Mezuk B, Ratliff S, Lapane KL. 2011. Subsidized housing not subsidized health: health status and fatigue among elders in public housing and other community settings. Ethn Dis 21(1):85-90.

[14] Acevedo-Garcia D, Lochner KA, Osypuk TL, Subramanian SV. Future Directions in Residential Segregation and Health Research:A Multilevel Approach. Am J of Pub Health. 2003;93:215-221.

[15] Pollack CE, Griffin BA, Lynch J. 2010. Housing affordability and health among homeowners and renters. Am J Prev Med 39(6):515-21. ;Lipman, Barbara J. 2005. Something's Gotta Give: Working Families and the Cost of Housing. Washington, D.C.: Center for Housing Policy; Lee, Wang, Eric Beecroft, Jill Khadduri, and Rhiannon Patterson. 2003. Impacts of Welfare Reform on Recipients of Housing Assistance: Evidence from Indiana and Delaware. Prepared for the U.S. Department of Housing and Urban Development by Abt Associates, Inc.; Levy, Helen and Thomas DeLeire. 2003. What Do People Buy When They Don't Buy Health Insurance and What Does That Say About Why They Are Uninsured? Working Paper 9826. Cambridge, Mass.: National Bureau of Economic Research.

[16] Ma CT, Gee L, Kushel MB 2008. Associations between housing instability and food insecurity with health care access in low-income children. Ambul Pediatr. 8(1):50-7

[17] Maantay J. Zoning, equity, and public health. Am J of Pub Health. 2001;91:1033-1041.

to a number of adverse health outcomes, including increased infectious disease risk, mortality rates,[18] and respiratory infections.[19] A number of studies show that low-income children receiving housing subsidies experience lower rates of iron deficiencies, malnutrition and underdevelopment than children in similar families who are not receiving subsidies.

Conversely, adequate, stable and affordable housing has been found to have positive impacts on child health[20] and educational outcomes[21], led to reduced use of emergency departments by formerly homeless individuals[22] and improved symptoms of asthma and other respiratory conditions.[23]

Existing Conditions

Affordability and equity: Housing costs in Boston are a significant burden on low and middle income residents. Even in the recent economic downturn, rent prices in Boston have increased. In fact, the average effective rent in Greater Boston reached an all-time high of $1,665 in 2011.[24] High housing costs place the greatest burden on lower-income residents: of Boston households earning less than $20,000 in 2009, 16% paid more than 30% of their income toward housing costs; only 5% of families earning more than $75,000 paid more than 30% of their income in housing costs.[25] Housing production in Greater Boston has declined sharply in the years since 2007, with the number of permits issued for buildings with five or more units declining by 75% between 2005 and 2009.[26]

Existing housing type and homeownership rates: Most Boston residents rent their homes. In 2010, 34% of Boston housing units were owner occupied. Owner occupancy was highest among White residents (40%), and much lower among Black residents (28%) and Latino residents (17%).[27] 35 Northampton Street is on the border of the South End and Roxbury. In the South End in 2011, the median monthly

[18] Stein L. A study of respiratory tuberculosis in relation to housing conditions in Edinburgh; the pre-war period. Br J Soc Med. 1950;4:143–169.
[19] Graham NM. The epidemiology of acute respiratory infections in children and adults: a global perspective. Epidemiol Rev. 1990;12:149–178.
[20] Frank, Deborah A., Nicole B. Neault, Anne Skalicky, John T. Cook, Jacqueline D. Wilson, Suzette Levenson, Alan F. Meyers, Timothy Heeren, Diana B. Cutts, Patrick H. Casey, Maureen M. Black, and Carol Berkowitz. 2006. Heat or Eat: The Low Income Home Energy Assistance Program and Nutritional and Health Risks Among Children Less Than 3 Years of Age. Pediatrics 118(5): 1293-1302; Meyers, Alan, Diana Cutts, Deborah A. Frank, Suzette Levenson, Anne Skalicky, Timothy Heeren, John Cook, Carol Berkowitz, Maureen Black, Patrick Casey, and Nieves Zaldivar. 2005. Subsidized Housing and Children's Nutritional Status: Data from a Multisite Surveillance Study. Archives of Pediatrics and Adolescent Medicine 159: 551-556; Meyers, Alan, Dana Rubin,
Maria Napoleone, and Kevin Nichols. 1993. Public Housing Subsidies May Improve Poor Children's Nutrition. American Journal of Public Health 83(1): 115
[21] Mueller EJ, Tighe RJ 2007. Making the case for affordable housing: Connecting housing with health and education outcomes. Journal of Planning Literature 21(4): 371-385
[22] Martinez TE, Burt MR 2006. Impact of permanent supportive housing on the use of acute care health services by homeless adults. Psychiatric Services 57(7): 992-999
[23] Breyesse J, Jacobs D, Weber W, Dixon S, Kawecki C, Aceti S, Lopez J 2011. Health outcomes and green renovation of affordable housing. Public Health Rep. 126(Suppl 1): 64-75
[24] Bluestone, 2011
[25] Health of Boston 2011, Boston Public Health Commission Research and Evaluation Office, Boston, Massachusetts. p. 59
[26] Bluestone, 2011 at 8.
[27] Health of Boston, 54, Figure 2.24 Housing Tenure by Race/Ethnicity, Boston, 2010

rent was $2,500, up from $2,100 in 2010[28]; in Roxbury, the 2011 median rent was $1,400, up from $1,375 in 2010[29]. In both neighborhoods, annual median rent is over half of annual median household income.

Current status of 35 Northampton Street: As discussed, the building consists of low-rent units for lower wage residents, many of whom work in the adjacent medical district. Many of these units are "micro apartments," a type of housing that has recently identified by the Boston Redevelopment Authority as a solution to the shortage of affordable housing in the city for entry-level workers. The preservation of these micro-units is consistent with the policy of providing small, affordable units within the City. The units at 35 Northampton Street make housing accessible to households with incomes below 60% of the area median income, without being regulated as affordable housing units by the City of Boston. Rents for these smaller units currently average $775 per month – much lower than average rents in the South End and Roxbury neighborhoods.

Residents in the focus groups spoke of highly of the degree of affordability of the units in the building, particularly in light of what they described as a good location in the "heart of Boston," with great views on several sides and near to so many amenities in the area, in particular medical services and commercial activities.

There were concerns from focus group participants about whether the degree of affordability would be preserved in the future. While residents understand the commitment of the developer to placing formal restrictions on the units to preserve affordability, there were concerns about what would happen after a few years have passed. Concerns were also expressed about current residents who cannot afford market rate buildings in the area but yet may not meet the low-income criteria expected for residence in the building moving forward.

Potential Effects

Preservation of affordable housing: Because of the major reinvestment needed to bring the building up to code, the building's housing units would be at risk of falling into disrepair or ultimately becoming unavailable for habitation without substantial reinvestment. One of the project's stated goals is to preserve the affordable nature of the existing housing; the plan also states that "all of the existing and new units will be made available at affordable rents."[30]

The existing units are affordable housing, with low rents maintained by the current owner, the BPHC, though affordability is not required by any legal restriction or agreement. According to the plan, "in the interests of maintaining the affordability benefits at the building, Trinity and BPHC will implement a set of formal restrictions on the units to protect their affordability."[31] Specifically, the advertisement for the August 28th, 2012 community meeting for the project stated that all 245 units in the project "will be affordable to households at or below 60% of area median income ($41,100 for a single-person household in 2012). While not all current residents would qualify for this maximum income threshold,

[28] City of Boston Department of Neighborhood Development, Policy Development and Research Division, South End Data Profile, 2010.
[29] City of Boston Department of Neighborhood Development, Policy Development and Research Division, Roxbury Data Profile, 2010.
[30] PNF 1-2
[31] PNF 2-2

the developer has stated that income limits will be implemented as new residents enter the building. As a result, current residents will not be displaced.

Given the increasing rents in adjoining neighborhoods, preservation of affordable housing is a pressing issue. Also, in light of the connection between housing affordability and various health outcomes, preserving so many units of affordable housing could be expected to have a positive impact on the health of residents across the range of health concerns discussed in the "Pathways" section.

Since affordable housing has been found to reduce displacement and segregation, the preservation of affordable housing called for by the plan has the potential to prevent further displacement and segregation. As a result, the project can be expected to also reduce the negative health outcomes and adverse health determinants associated with residential segregation, including, exposure to air pollutants, tuberculosis, cardiovascular disease and teenage childbirth.

Set aside for formerly homeless individuals: Additionally, the plan calls for at least 37 units of housing to be set aside for clients of supportive housing programs as the units are turned over to new tenants.[32] Dedicated units to house this population can be difficult to develop, and permanent housing placements have been found to significantly improve health outcomes for clients. The availability of placement for homeless clients will likely have a significant positive health impact.

Addition of handicapped accessible housing: The project will also add 11 new handicapped accessible units, along with parking garage upgrades to provide for additional handicapped parking spaces, and accessible entrances and exits.[33]

Recommendations

Given the importance of preserving affordable housing, it is recommended that: (1) legal agreements ensure the highest level of affordability for the longest period of time; and (2) the developer participate in marketing practices, including the Affirmative Marketing Program, that ensure that the resident mix is reflective of the city as a whole.

[32] PNF 1-2
[33] PNF 1-2

ACTIVE DESIGN

Health Impact Pathway

The Centers for Disease Prevention and Control identifies 10 key strategies to increase physical activity to support obesity prevention and control disease control[34], three of which are applicable to this project: (a) *Creation of or enhanced access to places for physical activity combined with informational outreach activities*. This can include fitness/exercise facilities. A review of 10 existing studies found that this type of intervention results in a 25% increase in the proportion of the population who are physically active at least three times per week and that weight loss or a decrease in body fat was found in several of the studies. (b) *Street-scale urban design and land use policies*. A range of studies have shown that "people walk more in neighborhoods that are safe, walkable and aesthetically pleasing." A review of six studies showed that there was a 35% median increase in physical activity measures. Common practices that can support improved physical activity in small geographic areas include enhancing the aesthetics of the streetscape and ensuring sidewalk continuity. Strategies for achieving high levels of bicycling include: development of cycling facilities and traffic calming along streets and roads; provision of ample bike parking and full integration with public transport.[35] (c) *Transportation and travel policies and practices*. Creating active transit options such as walking, biking and public transit (which commuters walk to/from) can increase daily physical activity. Two reviews by National Institute for Health and Clinical Excellence[36] and the Transportation Research Board found that "a variety of transportation policies…can be an effective way to promote physical activity."[37] Improved bicycling infrastructure was one of the interventions found to have an impact.

Barriers to active living for low income individuals include environmental factors[38] and affordability of recreational facilities.[39] Neighborhood design can significantly impact physical activity and health, especially through features such as land use mix, walkability, bicycling infrastructure, and parks and open space.[40] People who live in more dense areas use mass transit more often and are more physically active than those in suburban environments. Those who live near parks and destinations are more likely to walk or bicycle, and those who live near green space and more attractive environments are more

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[34] Centers for Disease Control and Prevention. *Strategies to Prevent Obesity and Other Chronic Diseases: The CDC Guide to Strategies to Increase Physical Activity in the Community*. Atlanta: U.S. Department of Health and Human Services; 2011.

[35] Pucher J, Buehler R. Making cycling irresistible: lessons from the Netherlands, Denmark, and Germany. Transport Reviews. 2008;28(4): p. 495–528.

[36] NICE Public Health Collaborating Centre— Physical Activity. Physical activity and the environment: review one: transport. Leicestershire (UK): National Institute for Health and Clinical Excellence; 2006. Available at http://www.nice.org.uk/nicemedia/pdf/word/ Transport%20evidence%20review.doc.

[37] Committee on Physical Activity, Health, Transportation, and Land Use; Transportation Research Board, Institute of Medicine of the National Academies. Does the built environment influence physical activity? Examining the evidence. Special report 282. Washington (DC): Transportation Research Board; 2005

[38] Powell, L.M., Slater, S., Chaloupka, F.J. The relationship between community physical activity setting and race, ethnicity and socioeconomic status. Evidence-based Preventive Medicine 2004: 1(2)

[39] BJ Moore, N Glick, B Romanowski, H Quinley Neighborhood safety, child care, and high costs of fruits and vegetables identified as barriers to increased activity and healthy eating and linked to overweight and income. FASEB Journal, 1996

[40] New York City Active Design Guidelines

likely to use physically active transportation.[41] Walkable streets also increase social cohesion: residents living in neighborhoods they considered to be walkable were 28% more likely to know their neighbors and 20% more likely to participate in social activities with others.

A neighborhood with significant obstacles to walking – such as high traffic volumes and speeds, narrow sidewalks, poorly connected streets, unsafe intersections, and a lack of lighting – is likely to reduce walking on residential streets.[42] Buildings themselves can promote active living. Among all building elements, stairs have a real potential for effective, accessible, and economical health impact.[43] There is evidence that interventions at the building scale such as motivational point-of-decision prompts, aesthetically pleasing staircases, and accessible physical activity facilities can result in increases in physical activity.[44]

Existing Conditions

- Street patterns: The Northampton Square campus is located between Albany Street and Harrison Avenue between Massachusetts Avenue and Northampton Street. The site has excellent access to regional highways via the Massachusetts Avenue Connector immediately to the north, Northampton Street, Albany Street, and Harrison Avenue.[45] It has street frontage on Northampton Street, which runs two-way between Albany Street and Harrison Avenue. Albany Street is a collector roadway running parallel to Harrison Avenue from Kneeland Street to Melnea Cass Boulevard and providing one travel lane in each direction near the site. Harrison Avenue is an urban minor arterial running two-way between Essex Street downtown and Warren Street in Roxbury. Massachusetts Avenue is a major urban arterial roadway through Boston connecting Dorchester to the east and Cambridge to the west and also provides key connections to Melnea Cass Boulevard, Huntington Avenue (Route 9), and the Massachusetts Turnpike (Interstate-90).[46]

- Parking: The existing parking garage has 539 parking spaces in a 3-level structure. It is used by monthly cardholders and transient users. The number of cards exceeds the number of spaces, which is typical in a garage that serves a mix of users, as not all card holders arrive at the same time. Most of the monthly cards are used by the Boston Medical Center employees, area residents, health club patrons, and workers in nearby businesses.[47] The garage is currently not handicap accessible. The proposed scope of work includes the construction of three and a half-story elevator to connect all three levels of the parking garage to the new main entry, lobby, management office, and mailroom. Ten handicap-accessible parking spaces within the garage will be provided, and in combination with the new elevator described above, the total parking supply will be reduced by two parking spaces to 537.

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[41] Jackson, R.J. (2012). Designing Healthy Communities. Jossey-Bass, San Francisco, CA.;

[42] US Centers for Disease Control and Prevention. Barriers to children walking and biking to school -- United States, 1999. MMWR. 2002;51(32):701-704.Li FZ, Fisher KJ, Brownson RC, et al. Multilevel modelling of built environment characteristics related to neighbourhood walking activity in older adults. J Epidemiol Community Health. 2005;59(7):558-564. Transportation Alternatives. Traffic's human toll: a study of the impacts of vehicular traffic on New York City residents. New York, NY. 2006.

[43] Craig Zimring PhD, C., Joseph, A., Nicoll, G.L. , Tsepas, S .Influences of Building Design and Site Design on Physical Activity: Research and Intervention Opportunities.

[44] Kahn EB, Ramsey LT, Brownson RC, et al. The effectiveness of interventions to increase physical activity: a systematic review. Am J Prev Med 2002;22:73.

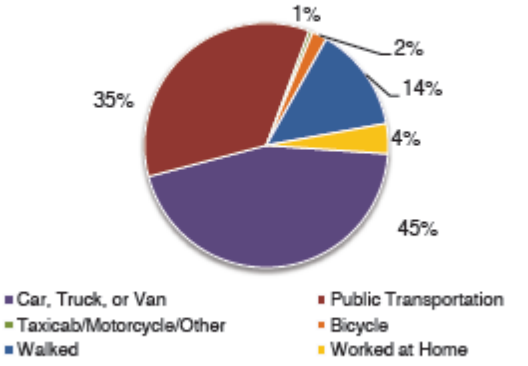
[45] 35 Northampton Street PNF, p. 4-2

[46] 35 Northampton Street PNF, p. 4-2

[47] 35 Northampton Street PNF, p. 4-2

- Boston commuting patterns: The city has the second highest percentage of non-automobile commuters in the country.[48] In 2009, an estimated 45% of Boston's employed residents drove to work in a car, truck, or van. Thirty-five percent of working residents relied on public transportation and 14% walked to work.[49] For the Boston Medical Center area, Boston Transportation Department data indicates that 56% of trips are by car, 17% by public transportation and 27% is walking, cycling and other.[50] Given that this project includes the addition of only 11 new units, it is expected that there will not be a significant increase in number of vehicle trips generated.

Figure 2.23 Workers' Means of Transportation to Workplace, Boston, 2009



DATA SOURCE: U.S. Census Bureau, 2009 American Community Survey

- Environment supporting biking and walking: Among the neighborhoods in Boston, South End ranks as ninth and Roxbury ranks fifteenth in walkability[51] Hubway, the city's bike share program, has a 14-bike station on the Massachusetts Ave. side of Northampton Square. According to June 2012 utilization reports, the Boston Medical Center station had 389 in and out trips, which is lower than the average counts across the city (918).[52]

- Barriers to physical activity: There are significant traffic and pedestrian safety concerns for the immediate area. The Massachusetts Ave and Melnea Cass Blvd intersection, which is less than a quarter mile away from 35 Northampton Street, is ranked as having as the fifth highest number of bicycle-motor vehicle and pedestrian-motor vehicle crashes in the city.[53] In 2011, Boston EMS responded to 34 cyclist accidents on the South End stretch of Mass Ave, representing 6% of all such incidents in the entire city.

As detailed in the plan, there are sidewalks and ample pedestrian traffic on the Northampton Square block and in the immediate neighborhood. Observations found that the driveway/up ramp to the garage does not have crosswalk/pedestrian markings, which could have safety impacts. Curb cuts do not

[48] Freemark Y 2010 Transit mode share trends looking steady; rail appears to encourage non-automobile commutes. Transport Politic.
[49] Health of Boston, p. 53
[50] 35 Northampton Street PNF, p. 4-5
[51] Walkscore.com
[52] Boston Bikes In and Out Counts for June 2012. Retrieved on September 5, 2012
[53] 2008 Top 200 Crash Locations (http://services.massdot.state.ma.us/maptemplate/TopCrashLocations/)

include embedded rubber mats. Water puddles accumulate at the bottom of the curb cuts when it rains, apparently due to the grading of how the garage ramp meets the street surface.

The building itself also presents barriers to activities. The current stairwell is dingy and unwelcoming, with inadequate lighting despite the availability of windows. There are two bike racks available in the Northampton Square garage with more than 20 bikes and a motor scooter locked at and around them on a recent afternoon. Several bikes appeared damaged or possibly vandalized which may act as a deterrent for use. Some bikes are locked to other poles and railings near the bike rack. The only bike route for the garage is to on the car ramps, which is obstructed for bike access by the pay gates.

Potential Effects

The change in the facade of the new shared entryway at 860 Harrison Avenue and additional landscaping has potential to enhance the pedestrian interest in physical activity, as well as improve their access to the building.[54] There will be minimal impact on public transit access.

There is a stated commitment to work with Boston Transportation Department to develop a Travel Development Management (TDM) program, in order to promote bicycle use among residents, workers, and visitors of Northampton Square. The TDM program, along with LEED prerequisites, will ensure that the project: supports public transit connectivity throughout the city; provides 40 covered bike storage facilities in the parking garage; provides access to at least one fuel-efficient Zipcar in the parking space in the adjacent garage; and does not create additional net new vehicle parking, and reassigns existing parking spaces as 10 handicap-accessible spots.[55]

The developers will also be pursuing a LEED Physical Activity Innovation Credit that could increase regular intentional and incidental physical activity. They will put measures in place to increase access and use of the stairways. In addition to unlocked, direct stairway access on all floors, the stairways will have architectural lighting design incorporated, heating/air conditioning provided, and closed-circuit television monitoring used for security. There is also expressed interest in providing signage to encourage stair use for travel and exploring opportunities to incorporate a music system and artwork within the stairways.[56]

The project plan does not directly impact the Northampton Square Fitness Center. Residents who utilize the Center will continue to have similar access with the existing membership fee structure, including subsidized memberships for low income residents.

It is not apparent from the narrative whether these bike spaces in the garage will be limited to 35 Northampton St residents or be available for all building users. The plan also gives consideration to a possible separate bike entrance into garage. Focus group participants expressed interest in the addition of bicycle parking. Residents in the focus groups also requested that an additional crosswalk be added mid-block on Northampton St to support pedestrian access to the CVS across the Street. However, with the proposed change to the current main entrance location, this may not be feasible or necessary.

[54] 35 Northampton PNF, page 3-2
[55] 35 Northampton PNF, page 4-6
[56] 35 Northampton PNF, page 3-8

Recommendations

(1) The physical activity innovation credit has potential to increase regular and incidental physical activity. It should be pursued with additional considerations: (a) Promote availability and accessibility of the Fitness Center by providing signage with directions and encouraging its use with incentives. To achieve physical activity innovation credits 22 and 23, continue the existing subsidized Fitness Center memberships for low-income tenants. (b) Because stairwells can be isolated locations, assure that security system in physical activity innovation credit 17 is visible and known to stairwell users, perhaps with signage. Consider installation of emergency alert buttons into the stairs. (c) Finalize plans for physical activity innovation credit 9 to incorporate permanent signage capability encouraging stair use throughout the site. (d) Finalize plans for physical activity innovation credit 13 to incorporate a music system and credit 14 to install artwork, which would both enhance the environmental aspects of the stairwell to further promote use. Seek resident involvement in final plans for these design aspects. (e) Consider vibrant color scheme for stairwell that will also be appealing to stairwell users.

(2) The developers' commitment to promoting alternatives to motor vehicle travel has potential to improve modes of active transit through walking and bicycle. As they move forward with implementing a travel demand management program, the developer should: (a) Provide additional, secured and accessible bicycle parking needs for all visitors that exceeds the City of Boston's Bicycle Parking Guidelines. (b) Install signage leading to bike parking area, and signage in bike parking area that reminds bicyclists to wear helmets for head injury prevention. (c) Provide information on nearest bike repair stores, locations to purchase bike helmets, and Hubway bike share brochures. (d) Promote the use of Hubway bike stations. (e) Install a permanently marked smooth-surface crosswalk across the wide span of the garage entrance. (f) Consider collaborating with neighborhood groups to install way-finding signs to local parks.

SAFETY

Health Impact Pathway

Perceived and actual safety from crime can affect levels of physical activity. The design of buildings and the arrangement of streets, public facilities and other outdoor spaces can affect the opportunity for crime and the level of fear.[57] The "Crime Prevention Through Environmental Design (CPTED)" approach was developed to ensure that the "proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime and an improvement in the quality of life."[58] CPTED focuses on reducing crime opportunities and promoting positive social behavior through features of the built environment like the placement of lighting, landscaping, target hardening and defensible space.

The impact of living in a community with high levels of crime and violence or that is perceived to be unsafe can increase stress[59] [60], which in turn is associated with a variety of other health conditions, including poor pregnancy outcomes, high blood pressure, diabetes, cancer, respiratory infections and heart disease.[61]

In turn, troublesome and potentially threatening social and physical conditions in a neighborhood – such as groups of rowdy teens, public drunkenness, public drug use or sales, people fighting, street hassles, prostitution, aggressive panhandling, graffiti, litter, and abandoned buildings – are linked to the prevalence of crime, perceptions of crime, and potential for neighborhood change.[62]

Existing Conditions

Lower Roxbury, the neighborhood where 35 Northampton Street is located, is part of the D-4 Police District, which also includes South End, Back Bay and Fenway. The building also borders the B-2 Police District (Roxbury and Mission Hill).[63] Like the rest of Boston, both districts have experienced a decline in overall crime reports since 2011 (7% and 13%, respectively); however, the two districts have the highest numbers of crime reports in Boston, accounting for 14% and 18% of the city's total.[64] In 2012 (to date), B-2 has had the highest numbers of homicides, rapes (includes attempts), robberies (includes attempts), and vehicle theft and attempts.[65] In 2006-2008 combined, homicide rates in Roxbury were higher than

[57] Massoomeh, H.M., Abdullah, A. Razak, and Tilaki, M.J.M.M. N.A. (2011, February). A Review of the Effectiveness of Crime Prevention by Design Approaches towards Sustainable Development. Journal of Sustainable Development Vol. 4, No. 1

[58] Crowe TD. Crime prevention through environmental design: applications of architectural design and space management concepts. Boston: Butterworth-Heinemann; 2000.

[59] Ellen, I. G., Mijanovich, T. and Dillman, K.N. (2001), Neighborhood Effects on Health: Exploring the Links and Assessing the Evidence. Journal of Urban Affairs, 23: 391–408; PolicyLink. 2002. Reducing health disparities through a focus on communities. A PolicyLink Report. Oakland, CA.

[60] Garbarino, J, Dubrow, N, Kostelny, K and C. Pardo.1992. Children in Danger: Coping with the Consequences of Community Violence. San Francisco: Jossey-Bass Publishers.

[61] Fitzpatrick, K and M. LaGory, 2000. Unhealthy Places. New York and London: Routledge.

[62] Taylor RB. The Incivilities or 'Broken Windows' Thesis. Department of Criminal Justice. Temple University. Philadelphia, PA.

[63] Boston Police Department Website

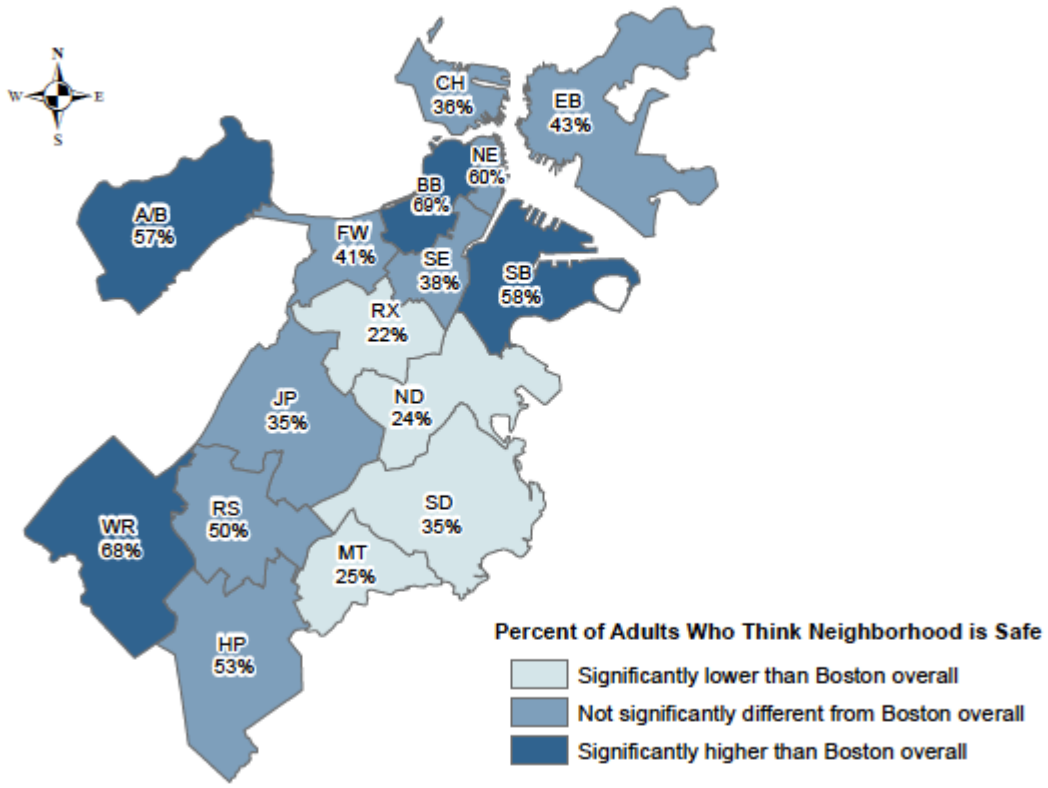
[64] Part One Crime Reported by the Boston Police Department by Offense and by District/Area

[65] Part One Crime Reported by the Boston Police Department by Offense and by District/Area

the Boston rate of 8.5 per 100,000, while the South End, on the other hand, had homicide rates that are lower than the city average.[66]

Residential burglaries continue to be a problem in the D-4 District, despite increased patrols and educational initiatives that have been taken, accounting for the highest reported number in the city this year to date.[67] Among Boston adults, 43% consider their neighborhood safe. A lower percentage of adults in Roxbury compared to Boston overall considered their neighborhoods safe.[68]

Figure 30.12 Adults Who Think Their Neighborhood is Safe, 2008



Among Boston adults, 43% consider their neighborhood safe. A lower percentage of adults in Roxbury compared to Boston overall considered their neighborhoods safe.[69]

[66] Health of Boston 2011, p. 373
[67] Part One Crime Reported by the Boston Police Department by Offense and by District/Area; http://www.cityofboston.gov/police/districts/d4.asp
[68] Health of Boston 2011, p. 363
[69] Health of Boston 2011, p. 363

In the series of focus group sessions held with residents of Northampton Square, several safety concerns were raised: (a) There are often people who spend nights sleeping in the hallways of building because they are unable to get into the shelters that night. (b) There is concern about the how easy it is for people without keys to get into the building through various entry points. (c) There once was an intercom system that could be used to let people in that is no longer working. (d) Delivered packages that are left at the doors of the apartment units are often stolen. (e) It is believed that substantial drug activity is taking place in common areas throughout the buildings. (f) Residents report that there are often used drug needles, bodily waste, and garbage left in the public spaces of the building, in addition to other damage done to the walls and ceilings of the building.

Potential Effects

A corridor alongside the parking garage on Northampton Street will be constructed to connect 35 Northampton Street to 860 Harrison Street and will lead to into what will become property management space for both buildings. The added connector will allow for one main entrance point for residents at both existing buildings, which will greatly improve the security for both buildings.[70] Additionally, the plan calls for "increased visibility, usability, and familiarity of egress stairs."[71] If measures intended to increase stair utilization are successful, the increased traffic on the stairs will also potentially increase the level of perceived and actual safety. The plan calls for measures to secure the site perimeter during construction including fencing and lighting.[72] The plan also calls for enhanced security measures in the garage.

Recommendations

(1) Use the CPTED strategies of natural surveillance, natural access control, territorial reinforcement and maintenance to reduce the incidents and perception of crime. (2) Design a security system to provide 24-hour protection for residents that includes camera surveillance, an entryway intercom system and staff that will patrol the area and be available for emergencies. (3) Develop a plan that will meet the immediate safety concerns (i.e., cleanliness, drug activity, non-resident access) while the rehabilitation project is underway. It is preferred that there be security staff and/or a resident services coordinator on site to monitor the building and respond to resident issues.

[70] Project Notification Form - 35 Northampton Street Redevelopment, p. 2-3
[71] PNF at 3.4.9
[72] PNF at 5.12.3

EMPLOYMENT

Health Impact Pathway

Employment typically predicts income, which has a significant impact on health. This is especially true at lower income levels, where there is a greater than one to one relationship between income and health. Further, several studies have found that the impact of income on health and mortality rates is long-lasting.[73] Employment can also have a direct impact on physical and mental health. It is the primary way people get health insurance, and full-time employment is associated with slower declines in perceived health and physical functioning for both men and women.[74] Unemployment, on the other hand, contributes to chronic stress and other mental health challenges, including an elevated suicide risk.[75] A lack of job security has been found to contribute significantly to poor mental and physical health, particularly among poorer workers.[76] Unemployment contributes to inequality by undermining families and separating communities without employment opportunities from those which are better connected to opportunity.[77]

Existing Conditions

While Boston weathered the recent recession better than many other cities, it still saw significant increase in unemployment between 2008 and 2010. During the economic downturn, blue-collar industries, including construction, experienced the largest job losses, especially in the manufacturing and transportation/warehousing sectors, which saw a 25% decrease. The largest job gains occurred in health care and social assistance, with a 23% increase.[78] Unemployment has had a dramatically unequal impact, with the unemployment rate for Black males in Boston at 29.3%, more than four times the rate for White males (6.6%).[79]

[73] Deaton, A. 2002. Policy Implications Of The Gradient Of Health And Wealth. Health Aff, Vol. 21(2):13-30; (more in this whole journal issue: http://content.healthaffairs.org/content/21/2.toc)

[74] Ross C, Mirowsy J. 1995. Does employment affect health? J Health and Social Behavior, Vol. 36 (September):230-243

[75] Yamauchi T, Fujita T, Tachimori H, Takeshima T, Inagaki M, Sudo A. 2012. Age-adjusted relative suicide risk by marital and employment status over the past 25 years in Japan. J Public Health. PMID: 22789751

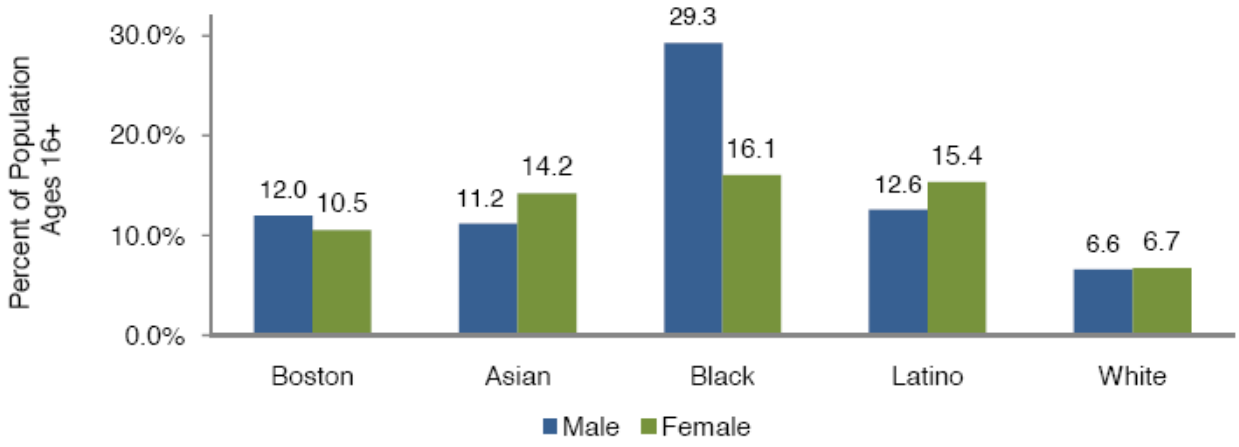
[76] Marmot M, Siegrist J, Theorell T, and Feeney A 2005 Health and the psychosocial environment at work. In Marmot M, and Wilkinson RQ, eds., Social Determinants of Health. Oxford: Oxford University Press.

[77] Bruce Western, Punishment and Inequality in America. New York: Russell Sage Foundation, 2006. See also, Bruce Western & Becky Pettit, 2005. Black White Earnings, Inequality, Employment Rates and Incarceration. AM. J. SOCIOL. 111:553 578. See also, Becky Pettit & Bruce Western. 2004. Mass Imprisonment and the Life Course: Race and Class Inequality in U.S. Incarceration. AM. SOCIOL. REV. 69:151 69

[78] Health of Boston 2011, p. 52

[79] Health of Boston, 2011, p. 6

Figure 2.17 Unemployment Rate by Race/Ethnicity and Gender, Boston, 2009



DATA SOURCE: U.S. Census Bureau, 2009 American Community Survey

While the minimum wage in the state of Massachusetts is $8 per hour, the living wage for Boston, defined by the Boston Living Wage Ordinance as the hourly wage that is sufficient for a family of four to live on or above poverty line, is $13.10 per hour.

Potential Effects

The project will create approximately 105 construction phase employment opportunities. The developer has committed to "promote local employment through good faith efforts to hire Boston residents."

Recommendations

In the area of employment, the HIA Workgroup recommends that the developer: (1) Commit to exceed the requirements of the Boston Residents Jobs Policy[80], which sets goals for the employment of Boston residents, including minority and women residents. (2) Consider measures to ensure that residents from the project's surrounding neighborhoods are offered opportunities for employment. (3) Exceed the wage set by the Boston Living Wage Ordinance for all jobs created in the development, maintenance and operation of the building.[81]

[80] http://www.cityofboston.gov/brjp/emplo_stand.asp

[81] The Newmarket Business Association, located in the immediate neighborhood of 35 Northampton Street, has requested that the developer meet with and consider contracting labor based in the Newmarket area.

ENVIRONMENTAL EXPOSURES

This section considers several environmental issues.

Construction-Related Outdoor and Indoor Air Quality

Health Impact Pathway

Asbestos is a known carcinogen with exposure to airborne asbestos linked to asbestosis, mesothelioma, lung cancer, and other cancers. [82] Lead exposure, particularly in young children, can result in neurological effects including learning disabilities, developmental delays, and personality changes as well as organ damage.[83] Both are of concern in renovation projects as they can become airborne in dust when materials containing them are disturbed through demolition or renovation. Exposure to both can be prevented through proper removal beforehand and safe work practices to prevent the generation/spread of dust during work.

Noise from renovation/construction noise can impact the health and well being of building residents ranging from mildly irritating and disruptive to serious disturbance with direct health effects. [84] One of the most impacted groups will likely be those working overnight shifts.

Also impacted will be those individuals who do not leave the building during the day due to disability. Construction dust from the renovation may be a significant problem as well. Dust exposure can be a trigger for asthma as well as causing respiratory and eye irritation in individuals without underlying health concerns.

Emissions from construction vehicles/equipment (most diesel powered and run for prolonged periods of time) contribute to the local air pollution burden. The association between diesel particulate emissions and adverse health outcomes has been well documented in the literature. Street traffic caused by construction activity can also lead to increased emissions exposure.

Existing Conditions

According to the plan, lead and asbestos containing materials are present in the building. Data is not currently available regarding the baseline air quality conditions, and time and resource constraints precluded data collection.

Potential Health Impacts

Section 5.7 of the PNF addresses noise after the work is complete (noise from mechanical building systems). The impact of noise on residents during construction and ways of mitigating it are discussed generally in section 5.12.7 which addresses construction noise impacts. Section 5.11.1 of the PNF

[82] US EPA, Asbestos: basic information. Available at: http://www.epa.gov/asbestos/pubs/help.html

[83] US EPA, Facts about lead. Available at: http://epa.gov/lead/pubs/leadinfo.htm#health

[84] Ng CF 2004 Effects of building construction noise on residents: a quasi-experiment. Journal of Environmental Psychology. 20(4):475-385

references OSHA regulations for protection of workers from lead exposure during work in areas containing lead, but this does not adequately address protection of residents.

Recommendations

(1) Work on the project in areas where lead is expected to be present should meet the EPA Renovation Repair and Painting rules and Massachusetts regulations regarding lead-safe work practices to prevent the generation and spread of lead dust. Depending on the individual circumstances of particular work areas, a licensed deleading contractor may need to be hired to perform deleading prior to any other work. (2) Contractors should follow state and City of Boston regulations regarding handling and removal/disposal of suspected asbestos containing materials. In particular, section 5.11.1 of the PNF should be modified to include testing of suspected asbestos containing material (ACM) to verify its composition and/or removal of suspected ACM by a licensed asbestos abatement contractor in accordance with all applicable asbestos regulations if testing is not conducted. (3) The Construction Management Plan should address specific measures to ensure a low level of noise emissions and ensure compliance with 5-minute idling law. (4) In addition to the signage with contact information for the construction manager described in section 5.12.1 of the PNF, advance notice should be given to residents of the work to be done along with an accessible point of contact for questions/complaints. (5) In addition to dust control measures outlined in section 5.12.6 of the PNF, there should be proper containment of all work, vacuum capture attachments for tools where appropriate to control dust, and cleanup of dust/debris after each job.

Medium- to Long-Term Indoor Air Quality

Pathway

In tightly insulated and high efficiency buildings (as proposed in PNF section 3.4.5), off-gassing of volatile organic compounds (VOCs) from new fixtures and construction materials such as plywood, particle board, glues, carpets, adhesives, plastics, etc. can build up in the indoor air. According to the EPA, the potential health impacts associated with exposures may include: "eye, nose and throat irritation; headaches, loss of coordination, nausea, damage to the liver, kidney and central nervous system."[85] Asthma triggers – dust, dust mites, tobacco smoke, solvents, etc. are particularly a concern for the very young, the very old, and those with preexisting health conditions.[86]

Asthma has been found to be associated with home-based environmental risk factors, including particulate matter, environmental tobacco smoke (ETS), nitrogen dioxide, allergens, mold and lead, and these effects disproportionately affect households of low income and minority status. Poor housing conditions increase the risk of personal injury. The same study found heart conditions, stroke, hypertension, diabetes, arthritis and psychiatric conditions and fatigue were all more common among elders living in public housing.

[85] US EPA, An introduction to indoor air quality: volatile organic compounds. Available at: http://www.epa.gov/iaq/voc.html

[86] Rauh VA, Landrigan PJ, Luz C. 2008. Housing and health: Intersection of poverty and environmental exposures. Ann N Y Acad Sci. 2008;1136:276-88

Existing Conditions

Time and resources did not allow for any testing of air quality within the existing building, though the presence of lead and asbestos containing materials in the building presents a potential health risk if appropriate measures are not taken to remove or contain these hazards though renovation. While a plan for transitioning to being a smoke-free building is described in the project plan, residents of Northampton Square are presently not protected by a smoke-free policy.

Potential Health Impacts

The plan calls for achieving 10 of a possible 15 points in the Indoor Environmental Quality section of the LEED rating system. Included in these points are all four Low-Emitting Materials points for the following: Adhesives and Sealants (Credit 4.1), Paints and Coatings (Credit 4.2), Flooring Systems (Credit 4.3) and Composite Wood and Agrifiber (Credit 4.4). Of real significance to the health of residents, the PNF specifies a plan for becoming a smoke-free building.

Recommendations

(1) While PNF section 3.4.6 indicates that 20% of materials cost will be recycled content material, the project should strive for a much higher percentage, particularly with regards to materials for the interior renovations of residential units. Re-used and recycled materials, in general, off-gas less than new materials. Use of low-VOC recycled materials further reduces exposure risks. (2) Where possible, all interior construction materials (especially wall board, carpets, cabinets, etc.) should be allowed to "air out" off site prior to installation. (3) As called for in the PNF, use low-VOC products for surface coatings (floor finishing, paints, etc.) and ventilate the work area thoroughly while drying. Do not allow re-occupancy until thoroughly dried and ventilated. (4) Though the PNF (section 3.4.7 credit 4.3) mentions low-emitting carpeting, the project should avoid carpeting completely in favor of solid surface flooring. Carpeting traps dust, dust mites, and other allergens/asthma triggers. Solid surface floors (when low-VOC materials and adhesives are used) are a much better choice for a healthy indoor environment. (5) The project should incorporate the use of alternative less-toxic cleaning products and integrated pest management in the building's management plan going forward once construction is complete. (6) Though the PNF addresses occupant control of thermostats (section 3.4.7 credit 6.2), if possible, the construction plan should also assess the feasibility of incorporating operable windows in as many units as possible to improve thermal comfort, allow for passive cooling in a power outage, and improve indoor air quality by increasing access to outdoor air. (7) Consider implementing the smoke-free housing policy on a shorter timeframe, though after proper notice and effective outreach, to achieve the health benefits of that protection as soon as practicable.

Energy Efficiency and Climate Change Mitigation

Health Impact Pathway

The use of electricity generated from fossil fuels generates air pollution in the form of particulate matter, nitrogen dioxides, and other toxic air contaminants, contributing to respiratory disease and deaths from cardiovascular disease.[87] Emissions also contribute indirectly to climate change, which presents threats to human health through increased air pollution, more extreme weather events, disruptions in food production, increases in water and food-borne illness, and increased infectious disease vectors.[88] Buildings generate more carbon emissions than any other source, including transportation and industrial uses, with significant impacts on air quality, resource expenditure, and occupational health and productivity.[89]

However, energy efficiency measures (such as those set forth in the LEED Green Building standards) promote long-term environmental quality as well as short-term benefits to building residents in the form of energy savings. In addition, insulation of exterior walls and windows reduces chances of moisture condensation and mold growth, thereby reducing asthma and other respiratory illnesses.

Existing Conditions

Because the existing building was constructed in the early 1970s, the building's mechanical systems are, according to the plan, "outdated and extremely inefficient, leading to wasted water and energy, along with very high operating costs."[90] The windows in the structure are single glazed and in steel frames, causing substantial heat loss and resident discomfort.

Potential Impacts

A major goal of the renovation is to address the energy inefficiency of the present building. The plan anticipates that improvements in window performance and mechanical systems will exceed the consensus performance standards[91] by at least 5%. While the draft LEED Project Checklist only claims one of a total of 19 points under the optional LEED Energy and Atmosphere Credit 1: Optimize Energy Performance, the plan anticipates that 5 more points may be achieved, and the developer will engage a certified commissioning agent to conduct energy modeling to confirm performance measurement.

In light of the connection between reduced emissions and health, the energy improvements anticipated in the project plan are likely to have a positive net impact on public health. In addition, efforts to increase stair use could also reduce electricity use for the building elevators. The PNF states that75% of

[87] Union of Concerned Scientists. The Hidden Cost of Fossil Fuels. http://www.ucsusa.org/clean_energy/fossil_fuels/the-hidden-cost-of-fossil-fuels.html

[88] Environmental Protection Agency. Climate Change and Public Health. United States Office of Policy, Environmental Protection Planning and Evaluation Agency (2171) EPA 236-F-97-005, October 1997.

[89] The Mayor's Task Force on Green Building in San Francisco. June 2007. Report and Recommendations.

[90] PNF at 1.2.1

[91] ASHRAE 90.1

the construction and demolition debris will be diverted from landfills, reducing the potential solid waste burden.

Recommendations

The HIA Workgroup recommends that the developer consider the following measures to enhance energy efficiency: (1) Increase performance under LEED Energy and Atmosphere Credit 1, achieving a higher level of efficiency. (2) Insulate exterior walls and windows to highest degree possible.[92] (3) Install LED lighting during renovation, particularly in units designated for disabled tenants, as they do not need to be changed as frequently.[93] (4) Use Energy Star appliances and HVAC systems. (5) Where feasible, consider the use of renewable sources of energy from a small wind turbine or solar.

Climate Change Adaptation

Health Impact Pathway

Sea level rise and the predicted increase in severe storms will increase the potential for flooding, which can damage building infrastructure including electrical panels and HVAC systems if they are below flood level. Loss of building utilities (electric, HVAC, etc.) may endanger medically compromised tenants such as those who rely on electrically powered medical equipment such as respirators or electric wheelchairs. If evacuation of the building is required because of loss of utilities or flooding, those with medical risk factors and mobility impairments will be the most difficult to evacuate. Flooding and water damage can also cause mold growth, which can lead to allergies, asthma attacks[94] and other difficulties, especially for those with existing health issues. Climate change models predict that, by the latter part of this century, Boston could see over 60 days per year with temperatures over 90 degrees and as many as two dozen of those over the 100 degree mark.[95] Heat waves accompanied by power loss or brown-outs can be life threatening to the elderly, the very young, and those with medical conditions or who rely on electronic medical devices.[96] Access to air conditioning and other means of cooling is one of the best protective resources.

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[92] For background on insulation, see: http://www.mass.gov/eea/docs/doer/publications/insul.pdf

[93] US EPA, Next generation lighting program: opportunities to advance efficient lighting for a cleaner environment Available at: http://www.energystar.gov/ia/partners/manuf_res/downloads/lighting/EPA_Report_on_NGL_Programs_for_508.pdf

[94] Hayes DJ, Manan JA, Mannino DM, Strawbridge H, Temprano J. The effect of humidity upon allergic asthma. Clin Respir J 2012; DOI:101111/j1752-699X.2012.00294.x; Park, J.-H., Kreiss, K. and Cox-Ganser, J. M. 2012, Rhinosinusitis and mold as risk factors for asthma symptoms in occupants of a water-damaged building. Indoor Air. doi: 10.1111/j.1600-0668.2012.00775.x; Gent JF, Kezik JM, Hill ME, Tsai E, Li D, Leaderer BP. 2012 Household mold and dust allergens: Exposure, sensitization and childhood asthma morbidity, Environmental Research, Available online 2 August 2012, ISSN 0013-9351, 10.1016/j.envres.2012.07.005.

[95] Union of Concerned Scientists, 2007

[96] Knowlton K, Rotkin-Ellman M, King G, Margolis H, Smith D, Solomon G, Trent R, English P. 2009 The 2006 California heat wave: impacts on emergency department visits. Environ Health Perspect 117(1):61-67; Kovarts RS, Shakoor Hajat 2008 Heat stress and public health: a critical review. Annu. Rev. Public Health 2008. 29:41–5

Existing Conditions

While the PNF references current FEMA flood maps (section 5.9), these maps may not adequately take projected sea level rise from climate change into account.

Potential Impacts

Because the plan does not explicitly take into account projected changes in flooding susceptibility due to climate change, building residents are potentially at a higher risk for the adverse health outcomes associated with floods and emergency evacuations.

Recommendations

Consider the following recommendations to more effectively prepare the building to adapt to the expected consequences of climate changes: (1) Consult flood zone maps that take into account extreme precipitation events and storm surge as well as predicted sea level rise over the next 70+ years. If the building is in an area that will see any chance of flooding according to those projections, the first floor should be designed as "floodable" – no critical infrastructure, no porous materials that can be damaged by water, etc. – or the construction should include a ground floor elevated above street level and predicted flooding levels. To the fullest extent possible, electrical service panels, HVAC, and other utilities should be located on the second floor or higher of the renovated building. (2) The renovation should include consideration of methods for passive cooling so that it is less dependent on power in a heat wave such as windows that can be opened by tenants as well as the number and placement of windows within units to allow cross ventilation.[97] (3) If possible, the building should incorporate some degree of backup power generation or self-sufficiency. (4) Building management should incorporate evacuation of disabled persons from the building and include floods and power loss among possible scenarios. (5) Install windows that are Energy Star climate adaptive for extreme cold and excessive heat. (6) Test windows and the building exterior for the ability to withstand high wind conditions from nor'easters and hurricane force winds.

Emergency Preparedness and Accessibility

Pathway

Apartments account for 44% of all high-rise fires, and 55% of deaths. Given the risks associated with living in a high-rise building, the health and safety of residents must be ensured.[98] [99] Emergency preparedness is a particular concern for disabled individuals, including those with mobility, visual, hearing, speech and cognition impairments. Design features and personal written evacuation plans can help ensure the safe evacuation of disabled persons living above ground level.[100] Education can also

[97] United States Environmental Protection Agency, Reducing Energy Use. Available at: http://www.epa.gov/greenhomes/ReduceEnergy.htm

[98] NFPA's "High-Rise Building Fires" report, by John R. Hall, Jr., December 2011.

[99] http://www.nfpa.org/assets/files//PDF/Public%20Education/High-riseSafety.pdf

[100] http://www.nfpa.org/assets/files/pdf/forms/evacuationguide.pdf

help people better understand the need for evacuation plans and assistive technology.[101] While disabled subpopulations have been found to be more likely to prepare emergency supplies, they are not as likely to have an evacuation plan as members of the general population.[102]

The renovation includes dedicating 11 of the units on the 4th and 5th floors as accessible for people with disabilities including those using wheelchairs, walkers, canes and white canes, as well as deaf and blind residents. Other occupants of the building (beyond these two floors) may have pre-existing physical and mental conditions. Construction/renovation can be a stressful experience for all building occupants and in-place reconstruction requires unusually good communication and cooperation between the contractors, workers, and building residents. This is particularly true for building residents that may not leave the building every day for regular 9 to 5 jobs or similar, particularly those who are disabled and homebound. Accessibility Requirements for Multifamily Housing: Both privately owned and publicly assisted housing, regardless of whether they are rental or for sale units, must meet the accessibility requirements of the Fair Housing Act when they are located in a building of four or more units, built for first occupancy after March 13, 1991.[103]

Existing Conditions

The height of the 29 story residential building at 35 Northampton Street poses emergency evacuation issues. Because the building was built prior to advancements in relevant safety codes, handicapped accessibility requirements, emergency preparedness technology and best practices were developed, the present building is not well prepared to respond to fire or other emergency, particularly in the case of disabled tenants.

Because the building was built before the current handicapped accessibility regulatory framework was put into place, the existing building is not in compliance with certain accessibility laws. Additionally, because the building has a skip-stop elevator system that stops in-between floors, improving handicapped accessibility is a particular challenge within the existing structure. The addition of 11 accessible units on the 4th and 5th floors (which are served by elevators) represents a significant improvement.

Several focus group participants expressed dissatisfaction with the current level of accessibility in the building, in particular with regard to the stairwells, the weight of main entrance doors, the lack of accessible units and challenges to receive prompt response from management when accessibility needs have arisen for current residents for whom disabilities have arisen.

Potential Health Impacts

The PNF for 35 Northampton Street includes 11 handicapped accessible living units (Section 2.3 and 4.4.4 for example), and there may be other current tenants of the building living with various sensory,

[101] McClure LA, Boninger ML, Oyster ML, Roach MJ, Nagy J, Nemunaitis G. Emergency evacuation readiness of full-time wheelchair users with spinal cord injury. Arch Phys Med Rehabil. 2011 Mar;92(3):491-8.

[102] Spence PR, Lachlan K, Burke JM, Seeger MW. Media use and information needs of the disabled during a natural disaster. J Health Care Poor Underserved. 2007 May;18(2):394-404.

[103] US Department of Housing and Urban Development. Accessibility Requirements for Buildings. Accessed at http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/disabilities/accessibilityR.

mobility, communication or cognitive impairments. The PNF for 35 Northampton plan does not address the use of National Fire Protection Association codes in general or for emergency evacuation. The plan also does not address design or planning for emergency evacuation in the event of fire, flooding, or other disaster.

Recommendations

(1) Additional planning should be conducted by the project team regarding emergency evacuation of able-bodied and disabled tenants. The content should include: occupant notification of emergency, finding the way out, using the way out, need for assistive persons, the potential presence and use of service animals. (2) Where possible, the building should exceed to NFPA codes, the Fair Housing Act and ANSI A117.1 (Accessible and Usable Buildings and Facilities) as well as ADA codes. Where appropriate, follow the best practices set forth in NFPA's *Emergency Evacuation Planning Guide for People with Disabilities*, which sets forth steps to be taken for visually impaired person, hearing impaired persons, speech impaired persons, and cognitively impaired persons. (3) Emergency evacuation procedures must include the requirement that all persons with a disability must draw up with the appropriate residence personnel a personal evacuation plan. (4) Technologies like the nationwide Commercial Mobile Telephone Alert Service (CMAS) can be considered to help to improve emergency preparedness by allowing for automatic notification of emergencies – particularly for those with hearing or other impairments.[104] (5) Consider using Project EV-AC to train personnel to give disabled residents proper instruction and practice. (See page 48 of NFPA Emergency Evacuation Guide for Persons with Disabilities.) (6) Provide maps of egress for residents and visitors. (7) Install new Fire Standpipe, Fire Alarms, Fire Suppression Systems, Sprinkler's and Carbon Monoxide and Radon Detection Systems, and upgraded Emergency Evacuation lighting and test external Fire Hydrants and upgrade if insufficient. (8) Additional planning regarding should include steps necessary to comply with the Fair Housing Act (and ANSI standards as incorporated in the Fair Housing Act) and ADA needs to be done by the project team and included as an additional chapter in a revised Project Notification Form. (9) To the greatest extent feasible, the property should also be in compliance with the 2010 ADA Accessibility Guidelines for Buildings, including Section 215.1, which adds a new exception to the scoping requirement for visible alarms in existing facilities so that visible alarms must be installed only when an existing fire alarm system is upgraded or replaced, or a new fire alarm system is installed.[105] (10) Tenant/community meetings with the inclusion of prospective disabled tenants should continue, with their input reflected in the design process and design features as appropriate. (11) Install bicycle and handicapped warning signs on Northampton Avenue on east and west sides of Harrison en route to the MBTA station on Washington Street.

[104] Harkins J, Tucker PE, Williams N, Sauro J. Vibration signaling in mobile devices for emergency alerting: a study with deaf evaluators. J Deaf Stud Deaf Educ. 2010 Fall;15(4):438-45. Epub 2010 May 28.

[105] US Department of Justice. Guidelines on the 2012 ADA Standards for Accessible Design. Sept. 15, 2010. Accessed at http://www.ada.gov/regs2010/2010ADAStandards/Guidance2010ADAstandards.htm

PROCESS RECOMMENDATIONS

Focus groups held with Northampton residents indicated a high level of engagement by Trinity Financial with many of the residents of 35 Northampton, and substantial knowledge of the project proposal. There was also some confusion about what decisions had already been made and what decisions would be made in the future, as well as the relationship of the current project to potential future phases. While the complexity of the process being undertaken to finance, permit and redevelop each of the buildings, some recommendations might make residents feel more involved in each step of the process.

Specifically, focus group participants were interested in ways they could be kept informed more consistently about the status of the project as well as its financing and timelines as the process moves forward, in order to have a more full understanding of timelines for construction, etc. Similarly, residents who participate in the focus groups had a desire to be able to give more thorough and thoughtful feedback into construction decisions. The following are a few recommendations for how a future process might best reflect resident needs:

- While it is not clear whether an Impact Advisory Group will be convened for this project, consider having regular discussions with stakeholders – particularly residents – that allow opportunities for the developers to work closely with residents of Northampton Square to understand the concerns, needs and recommendations for community, especially regarding construction.
- Provide written updates as aspects of the plan and timeline change, as well as after community meetings, to alleviate confusion as project plans develop and to keep residents who cannot be involved in public forum opportunities informed.
- Provide opportunities for written resident feedback for those that are unable or uninterested in providing feedback in more public forums, such as a tear-off letter or box for comment cards.
- As noted elsewhere in this report, make an on-site resident services coordinator or similar type of professional available to help liaise with residents and have the capacity to address health, safety and environmental concerns and the resources to work with residents who speak languages other than English.

CONCLUSION

As noted previously, while this HIA addresses only certain impacts of the 35 Northampton Street project, future phases of the campus redevelopment should receive continued attention to ensure that positive potential health benefits are maximized and negative potential health impacts are minimized. This attention and analysis should focus on the health issues identified in this report, as well as additional health and safety-related concerns that may be raised by members of the community.